FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

FOURTH ANNUAL REPORT

for the year ending March 31, 1985

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SECRETARIAT ON FORESTRY RESEARCH AND DEVELOPMENT

Address: #305 – 7671 Alderbridge Way
Richmond, B.C. V6X 1Z9

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LETTER OF TRANSMITTAL

The Honorable T.M. Waterland
Minister of Forests
Parliament Buildings
Victoria, B.C. V8V 1X4

Dear Sir:

It is my pleasant duty to submit this, the fourth Annual Report of the Forest Research Council of British Columbia, for the year ending 31 March 1985.

I remain,

Yours truly,

P.C. Trussell
Chairman
Forest Research Council

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FOREST RESEARCH COUNCIL OF B.C.

Membership	Date of Appointment	Term
Chairman:		
P.C. Trussell, Ph.D.	Feb. 1981	indefinite
ex officio:		
British Columbia Ministry of Forests		
- Chief Forester	Sept. 1984	indefinite
- Director, Research Branch	Sept. 1984	indefinite
Canadian Forestry Service		
- Director General, Pacific & Yukon Region Pacific Forest Research Centre	Sept. 1984	indefinite
Forest Engineering Research Institute of Canada (FERIC)		
- Manager, Western Division	Sept. 1984	indefinite
Fisheries & Oceans Canada		
- Director, Fisheries Research Branch Nanaimo	Sept. 1984	indefinite
Forintek Canada Corporation		
- Director of National Programmes Western Laboratory	Sept. 1984	indefinite
Universities		
- Dean of Forestry, University of British Columbia	Sept. 1984	indefinite

Membership	Date of Appointment	Term
Term:		
Woods industry, coast		
G.L. Ainscough Vice-President, Chief Forester MacMillan Bloedel Ltd.	Sept. 1984	3 yrs
Woods industry, interior north		
R. Stowell Vice-President, Woods Operations The Pas Lumber Co. Ltd.	Sept. 1984	3 yrs
Woods industry, interior south		
I.S. Tolnai Chief Forester Weyerhaeuser Canada Ltd.	Sept. 1984	3 yrs
Ranching		
E.T. Osborn Manager, Coldstream Ranch Ltd.	June 1983	1 yr
Recreation		
V.C. Brink, Ph.D. Professor Emeritus University of British Columbia	June 1982	1/2 yr
Wildlife		
I. McTaggart-Cowan, Ph.D. Professor Emeritus University of British Columbia	Sept. 1984	3 yrs

SECRETARIAT ON FORESTRY RESEARCH AND DEVELOPMENT

R.M. Strang, Ph.D. Executive Director and Secretary to the Council

M.L. Wallis Secretary/Office Manager

P.H. Pearse, Ph.D., resigned from the Council in August 1984 because of other work commitments. His departure, though understandable, is much regretted.

INTRODUCTION

The Forest Research Council of B.C. and its Secretariat on Forestry Research and Development were formed under the authority of the Ministry of Forests Act (1 January, 1979) to "... advise him (the Minister) with respect to any matter included in his duties, powers and functions ...". This mandate was amplified in the Ministry's 1980 "Blueprint for Action" as being "... to co-ordinate all forest research in the Province and sponsor grants for research and forestry education".

The adverse forest economy which continued through 1984 has had a very dampening effect on both government and industrial investment in forestry research. British Columbia currently spends only 0.3% of Gross Provincial Forestry Product on research and development, whereas we contend that the minimum should be 1.5% and the optimum amount 2.5%.

The Council looks forward to the day when it can play a role in substantially increasing the funds available to forestry research for initiating investigative work in areas of high priority.

It will be a major aim of your Council in the coming year to identify opportunities to improve results and to reduce costs in forest research, and to recommend those areas of highest potential return.

ACTIVITIES

Regular Meetings of Council

Five regular meetings of Council were held during the year, all at the Richmond Headquarters.

Change of Composition of Council

At its April and June meetings Council considered and implemented a major re-organization of the membership, bringing into Council senior representatives from six major agencies engaged in forestry research, viz. the Canadian Forestry Service; the British Columbia Ministry of Forests, Research Branch; the Forest Engineering Research Institute of Canada; Fisheries and Oceans Canada, Fisheries Research Branch; Forintek Canada Corporation and the universities. This expansion, to 14 members, will enable the Council to strengthen its role as co-ordinator and integrator of forestry research in the province.

The expanded Council met for the first time in September 1984 and reviewed the priority-setting procedures of the province's major research-performing agencies (Appendix 1).

Sub-Committees

Three sub-committees have been formed, all chaired by P.C. Trussell and serviced by the Secretariat: Finance (V.C. Brink, E.T. Osborn); Policy and Priorities (G.L. Ainscough, J.A. Dangerfield, R.W. Kennedy, G.V. Wellburn); Communications and Technology Transfer (I.S. Tolnai, R. Stowell and R.J. Beamish). At year's end these last two sub-committees had begun detailed study of their mandated topics.

Just prior to going to press, a Biotechnology Forum was held. It brought together researchers in forestry-related biotechnology to develop a more cohesive thrust and to foster operational application of advanced technologies.

The Policy and Priorities sub-Committee will seek the Minister's approval for a fall Study Group workshop to address the question "What do we want the forests of B.C. to be by the mid-21st century?" The answer to this difficult question will provide a framework and direction for research policies and programmes.

A second forum to help in defining research needs is being prepared, also for fall 1985. It will examine the relationships between Intensive Silviculture and Recreational Uses of the Forest.

In the coming year we shall develop and build on the ideas and proposals formulated at these workshops.

Funding of Research

Following on its early identification of the tree x grass x cattle interaction problem as one greatly in need of continuing study, Council provided $5,000 to finance a remeasurement of permanent sample plots which had been established in 1971-72 in the Kamloops area. With retirement of the principal investigators imminent, remeasurement and re-evaluation of the plots was urgently needed. A full report has been submitted for publication (Appendix 2).

In the same locality, Council provided $5,000 to the Soil Science Department, University of British Columbia to fund the completion of a study of micro-environmental effects of different intensities of faller-selection cutting in the Interior Douglas-fir biogeoclimatic zone. Field work has been completed and an M.Sc. thesis reporting the study is due for submission shortly (Appendix 3).

Inventory of Active Forest and Range Research

The first revision of this inventory of current research activity in forestry and range was compiled, printed and distributed. It has again been well received and regularly used.

Over 300 entries are listed in the research field. They cover the whole gamut of forestry activities and operations from seed production through to manufacturing and economics, and other uses of the forest such as ranching, recreation, wildlife and water management. Another 100 entries list data collection and inventory projects, and about 100 operation trials by the Ministry's Silviculture Branch are identified. Fifty-two agencies or organizations engaged in forestry-related research are recorded.

Computerization of the inventory to facilitate revision and access is being investigated.

Other Forestry Research Developments

Despite difficult times, a number of encouraging developments are under way which will make sizable contributions to British Columbia's forest research and development effort.

A $14,000,000 expansion of the Canadian Forestry Service's Pacific Forest Research Centre is nearing completion in Victoria. This expansion will increase laboratory space, especially for chemistry and biological control work, allow for more greenhouse facilities and, by enhanced energy conservation, reduce operating costs of the Centre.

A western laboratory for the Pulp and Paper Research Institute of Canada is under construction in Discovery Park at the University of British Columbia. This laboratory occupying 7,400 square metres will provide facilities for 25 people initially and allow for a total staff of 125 over the next ten years.

A number of interesting new developments have been made by the Faculty of Forestry at the University of British Columbia: an industrial Chair of Forest Policy has been established; the Forest Economics and Policy Analysis Project has begun to publish its findings; Chairs of coastal Silviculture and of Biotechnology, jointly-funded with National Science and Engineering Research Council, have been approved in principle; three Departments have been created each with a senior faculty member as Head - Forest Harvesting and Wood Science, Forest Resources Management and Forest Sciences; and a 22-member Dean's Advisory Committee has been established to further liaison and communication between the Faculty and the rest of the forest community. The University is also collaborating in development of an Institute of Silviculture.

SECRETARIAT

The Secretariat continued to provide all needed logistical and administrative support for Council, and maintained liaison with the Ministry's Research Branch, the Canadian Forestry Service - Pacific Forest Research Centre, Forest Engineering Research Institute of Canada, Forintek Canada Corporation, the Science Council of British Columbia, the universities and industry by regular visits and attendance at planning meetings and workshops.

The Executive Director attended regular meetings of Coastal and Interior Tree Improvement Councils; some Regional Research Advisory Committee meetings; and Silviculture Workshops both coastal and interior. Field visits to a wide range of forestry operations and research activities were made.

FINANCIAL STATEMENT

DICKSON, STOJAK, VANDER MOLEN
CHARTERED ACCOUNTANTS

316 - 8055 ANDERSON ROAD
RICHMOND, B.C. V6Y 1S2

(604) 273-1277

W. LYLE DICKSON
PETER P. STOJAK
S.P.C. VANDER MOLEN

AUDITORS' REPORT

To the Members,
The Forest Research Council of British Columbia

We have examined the balance sheet of The Forest Research Council of British Columbia as at March 31, 1985 and the statements of changes in surplus and operations for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the Council as at March 31, 1985 and the results of its operations for the year then ended in accordance with accounting principles generally accepted for non-profit organizations applied on a consistent basis.

Richmond, B. C.
May 6, 1985

Dickson, Stojak, Vander Molen
CHARTERED ACCOUNTANTS

THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

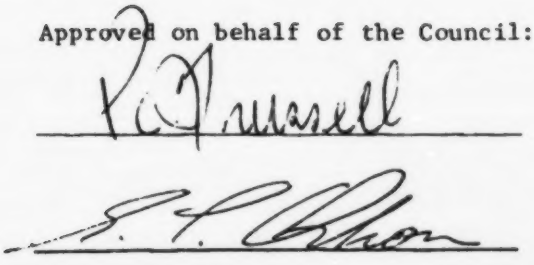
BALANCE SHEET

AS AT MARCH 31, 1985

ASSETS	1985	1984
CURRENT ASSETS		
Cash and term deposits	$ 50,494	$ 18,245
Accounts receivable	50,533	182
Prepaid expenses	930	1,204
	$ 101,957	$ 19,631

LIABILITIES AND SURPLUS		
CURRENT LIABILITIES		
Accounts payable and accrued liabilities	$ 23,922	$ 7,473
SURPLUS		
General operations	13,035	12,158
Research and special projects	65,000	-
	78,035	12,158
	$ 101,957	$ 19,631

Approved on behalf of the Council:



THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

STATEMENT OF CHANGES IN SURPLUS

FOR THE YEAR ENDED MARCH 31, 1985

	General Operations	Research and Special Projects	Total
SURPLUS			
Balance at beginning of year	$ 12,158	$ -	$ 12,158
Excess of revenue over expenditure for the year	65,877	-	65,877
	78,035		78,035
Designated appropriation	(65,000)	65,000	-
Balance at end of year	$ 13,035	$ 65,000	$ 78,035

THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

STATEMENT OF OPERATIONS

FOR THE YEAR ENDED MARCH 31, 1985

	Year Ended March 31, 1985	Five Months Ended March 31, 1984
REVENUE		
Operating grants	$ 200,000	$ 55,798
Interest earned and sundry	3,062	1,238
	203,062	57,036
EXPENDITURE		
Council		
Professional services	4,740	1,875
Travel	2,981	2,083
Research contributions	10,188	5,000
Administration		
Accounting and audit	1,218	1,243
Consulting fees	1,170	-
Memberships and subscriptions	682	399
Office and sundry	6,075	252
Rent	11,739	3,913
Salaries and employee benefits	86,117	25,958
Travel and meeting costs	12,275	4,155
	137,185	44,878
EXCESS OF REVENUE OVER EXPENDITURE FOR THE YEAR	$ 65,877	$ 12,158

THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

NOTE TO FINANCIAL STATEMENTS

AS AT MARCH 31, 1985

NOTE The Forest Research Council of British Columbia was incorporated under the Society Act of British Columbia on August 30, 1983. The purpose of the society is to stimulate and coordinate all aspects of research required to improve the efficiency of management and productivity of the forest and range resources of the Province of British Columbia.

APPENDICES

No. 1 Priority-setting procedures for six major research agencies.

No. 2 A long-term study on the compatibility of grass seeding and coniferous regeneration on clear-cuts in the south central interior of British Columbia.

No. 3 Effect of partial logging on micro-climate and growth of interior Douglas-fir stands.

Appendix No. 1

Priority-setting procedures for six major research agencies

B.C. Ministry of Forests' Research Branch develops and disseminates new knowledge and technologies in support of the Ministry's mandate to improve production from, and protection of, the Province's forest and range resources.

Its programmes are essentially applied, and rapid and effective technology transfer is vital. Problems to be addressed therefore are identified primarily by the users through advisory committees.

Within each of the six forest regions a Regional Research Advisory Committee (R.R.A.C.), with input from industry through Timber Supply Area (T.S.A.) planning committees, annually reviews established programmes, identifies new problems and establishes priorities. These are submitted to the Research Branch for collation and synthesis into key problem areas for subsequent evaluation by the Provincial Research Advisory Committee (P.R.A.C.).

This senior committee, which receives inputs also from the Tree Improvement Councils and other technical groups, is chaired by the Chief Forester. It comprises Forestry Division's Branch Directors, Regional Forestry Managers and Regional Research Managers. It meets annually to review the development of established programmes for compliance and relevance to current key areas.

This P.R.A.C. makes recommendations to guide the Research Branch Director. These may lead to reinforcement, realignment or termination of established programmes or to the inception of new work.

An annual reseach programme plan is drawn up with emphasis on primary management concerns.

Canadian Forestry Service (C.F.S.), Pacific Forest Research Centre (P.F.R.C.) operates within the framework of C.F.S. national priorities. Regional priorities are set in consultation with clients particularly through the Canada/B.C. Joint Forest Research Committee and the Canada/Yukon Forest Research Committee; by industry representation; and from staff members' perceptions.

By agreement, P.F.R.C. focuses on Protection - against fire, insects and diseases - and on basic support for the Provincial silvicultural research effort. It also provides ancillary support - laboratories, meteorology, statistics and biometry.

Forest Engineering Research Institute of Canada (FERIC) is a non-profit organization funded equally by industry and Federal government with eastern and western establishments devoted to improving the efficiency of wood harvesting, i.e. applied research.

Advisory committees (eastern and western) comprising largely member company representatives with input from C.F.S., universities and, in the west, B.C. and Alberta, meet twice a year to recommend research topics and priorities to the Board of Directors; ad hoc sub-Committees are created as needed and there is a permanent western sub-Committee on the mechanization of silviculture.

Roughly 50% of the effort is on logging, the balance varies but includes such significant joint studies as the Queen Charlotte Islands Fish- Forestry interaction project.

Fisheries & Oceans Canada, Fisheries Research Branch. National and regional goals set overall guidance.

Specific goals are set internally, with extensive input from advisory groups.

Research proposals undergo peer review through an internal Research Advisory Committee, and a biological review process.

Additional internal review is conducted jointly by habitat research and operations groups. It was noted that priorities cannot easily be altered.

A topic of concern is the partitioning of habitat or environmental factors and management (i.e. harvesting) factors. It is desirable to collect, collate and analyse good data on stream carrying capacity.

Presently the major thrusts in Salmon Habitat Research are toxicology and pollution; coast habitat ecology and fish/forestry interactions.

FORINTEK Canada Corporation, a non-profit corporation specializing in solid wood products research with laboratories located in Ottawa and Vancouver. Priorities for research are developed by Research Program Committees (RPC) established by the Board of Directors. Committee representation is drawn from supporting industry and government agencies. These Committees (East and West) provide guidance to the Board of Directors, the management and scientific staff of Forintek; recommend medium and long-term goals for research in relation to the forest products industry's immediate and long-term interests; consider the balance of effort directed to basic and applied research and technology transfer; evaluate progress; and advise on the application of research findings.

There are a number of product sector and program sub-committees reporting to each RPC, some national in scope (designated N), others more regional in scope.

Western RPC	Eastern RPC
Wood Engineering (N)	
Wood Characteristics (N)	
Wood Preservation (N)	
Lumber Manufacturing	Lumber Manufacturing
Composites West (Plywood)	Composites East (particle boards, inc. aspen)
	Building Construction (N)
	Biotechnology (N)

Committees meet twice a year. In the fall they review project progress and discuss research and development priorities for the coming year's research program. In the spring the proposed program is evaluated in light of recommended priorities.

University of British Columbia, Faculty of Forestry. The faculty has a broad scope - education, training and research - in the whole range of forestry activities. Funding for research is virtually all external and the availability of funding constrains choice of research topics. It is a matter of real concern that little or no money is provided for resource management or multi-disciplinary research. Federal Block Grants do allow discretionary spending but this too is constrained - by the quality of graduate students.

Advisory Committees have recently been created to give guidance to economics and policy research, and a 22-man Dean's Advisory Committee is now in place.

Appendix No. 2

A long-term study on the compatibility of grass seeding and coniferous regeneration on clear-cuts in the south central interior of British Columbia.

T. Baloc et al. 1985

ABSTRACT

Five clearcut areas in the south central interior of British Columbia were selected to study the long-term effects of grass seeding on conifer regeneration, growth and survival. Although conifer density and growth were generally found to be less in seeded that in unseeded areas, site variability, seed source, post-logging treatments, interspecific and intraspecific competition were other factors involved in tree-grass compatability. The effect of cattle grazing on conifer regeneration was not a major part of this study since there was only one site where a comparison of grazed and ungrazed areas could be made. Nevertheless, at this one study site, grazing of seeded grasses by cattle did not appear to affect conifer growth and survival adversely.

Appendix No. 3

Effect of Partial Logging on Micro-Climate and Growth of Interior Douglas-fir Stands

Ronnie L. Korol

Highlights from this M.Sc. thesis, completed with Forest Research Council support, are:

i) growing season water balance was higher for the north slope (Lac le Jeune) than for the south slope (Heffley), although they received the same precipitation (94 mm) and the Lac le Jeune site is classified as the drier of the two by the biogeoclimatic system;

ii) comparison of total growing season evapotranspiration is interesting:-

Canopy closure	Total Evapotranspiration	
	Lac le Jeune	Heffley
0%	190 mm	97 mm
10%		138 mm
25%		137 mm
50%	175 mm	146 mm
100% (no grass)	188 mm	149 mm

There is a positive correlation between evapotranspiration and growth;

iii) the vapour pressure deficit of the air has a much greater influence on forest stand evapotranspiration than does net radiation.